## SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> A NOVEL HUMAN LEUCINE-RICH REPEAT CONTAINING PROTEIN EXPRESSED PREDOMINATELY IN NERVOUS SYSTEM TISSUES, HLRRNS1

<130> D0085.np <150> US 60/259,479 <151> 2001-01-03 <150> US 60/260,616 <1.51> 2001-01-09 <160> 63 <170> PatentIn version 3.0 <210> 1 <211> 2450 <212> DNA <213> homo sapiens <220> <221> CDS <222> (549).,(2450)

<400> 1

120 180 240 occoccage occacegoeg cogetgegga ageoccetee ceacecagga geoggggagg ggggagagcg cgagaggctc caggcccggc cgcagccccg ccccccgcgc ctccccgcag 300 egggeettge accecaaatt cetgageete attggggggg teetceecee acgggeeggg 360 catgetgeec eceggaagga acceetetee tegeteacga tetegacagg aageeetgga 420 gaactgggga ggcagagacc ccggctggcc ggaggcatgt ggagggggg gcctgggcgc 480 agggagagge ccageggaag ccaagecace aggeeececa gegteeacge ggageatgaa 540 590 Met Ala Arg Ala Arg Gly Ser Pro Cys Pro Pro Leu Pro Pro

60

638 ggt agg atg tee tgg eec cae ggg gea ttg ete tte ete tgg ete tte Gly Arg Met Ser Trp Pro His Gly Ala Leu Leu Phe Leu Trp Leu Phe 686 tee eea eee etg ggg gee ggt gga ggt gga gtg gee gtg aeg tet gee

Ser Pro Pro Leu Gly Ala Gly Gly Gly Gly Val Ala Val Thr Ser Ala 734 gee gga ggg ggc tee eeg eeg gee ace tee tge eee gtg gee tge tee

Ala Gly Gly Gly Ser Pro Pro Ala Thr Ser Cys Pro Val Ala Cys Ser

50 55 60

tgc Cys	agc Ser	aac Asn 65	cag Gln	gcc Ala	agc Ser	cgg Arg	gtg Val 70	atc Ile	tgc Cys	aca Thr	cgg Arg	aga Arg 75	gac Asp	ctg Leu	gcc Ala	782
gag Glu	gtc Val 80	cca Pro	gcc Ala	agc Ser	atc Ile	eeg Pro 85	gtc Val	aac Asn	acg Thr	cgg Arg	tac Tyr 90	ctg Leu	aac Asn	ctg Leu	caa Gln	830
gag Glu 95	aac Asn	ggc Gly	atc Ile	cag Gln	gtg Val 100	atc Ile	cgg Arg	acg Thr	gac Asp	acg Thr 105	ttc Phe	aag Lys	cac His	ctg Leu	cgg Arg 110	878
cac His	ctg Leu	gag Glu	att Ile	ctg Leu 115	cag Gln	ctg Leu	agc Ser	aag Lys	aac Asn 120	ctg Leu	gtg Val	cgc Arg	aag Lys	atc Ile 125	gag Glu	926
gtg Val	ggc Gly	gcc Ala	ttc Phe 130	aac Asn	ggg Gly	ctg Leu	ccc Pro	agc Ser 135	ctc Leu	aac Asn	acg Thr	ctg Leu	gag Glu 140	ctt Leu	ttt Phe	974
gac Asp	aac Asn	egg Arg 145	ctg Leu	acc Thr	acg Thr	gtg Val	ccc Pro 150	acg Thr	cag Gln	gcc Ala	ttc Phe	gag Glu 155	tac Tyr	ctg Leu	tcc Ser	1022
aag Lys	ctg Leu 160	cgg Arg	gag Glu	ctc Leu	tgg Trp	ctg Leu 165	cgg Arg	aac Asn	aac Asn	ccc Pro	atc Ile 170	gag Glu	agc Ser	atc Ile	ccc Pro	1070
tcc Ser 175	tac Tyr	gcc Ala	ttc Phe	aac Asn	cgc Arg 180	gtg Val	ccc Pro	tcg Ser	ctg Leu	cgg Arg 185	Arg	ctg Leu	gac Asp	ctg Leu	ggc Gly 190	1118
gag Glu	ctc Leu	aag Lys	egg Arg	ctg Leu 195	gaa Glu	tac Tyr	atc Ile	tcg Ser	gag Glu 200	gcg Ala	gcc Ala	ttc Phe	gag Glu	ggg Gly 205	ctg Leu	1166
gtc Val	aac Asn	ctg Leu	cgc Arg 210	Tyr	ctc	aac Asn	ctg Leu	ggc Gly 215	Met	tgc Cys	aac Asn	ctc	aag Lys 220	Asp	atc Ile	1214
ecc	aac Asn	cto Leu 225	Thr	gcc Ala	ctg Leu	gtg Val	ege Arg 230	Leu	gag	gag Glu	ctg Leu	gag Glu 235	Leu	tcg Ser	ggc	1262
aac Asr	cgg Arg 240	Let	gad Asp	ctg Lev	atc Ile	Arg 245	Pro	ggc	tcc Ser	tto Phe	cag Glr 250	r GT?	cto Leu	acc Thr	agc Ser	1310
cto Leu 255	Arc	aaq J Lys	g cto Lei	g tgo ı Trp	cto Leu 260	Met	g cac His	geo Ala	caq Glr	gta Val 265	L Ala	aco Thr	ato : Ile	gaç Glu	cgc Arg 270	1358
aac Asr	gco n Ala	tto Phe	gao Asp	gad Asp 275	Let	aaq Lys	g teg s Ser	g cto Leu	g gaq u Glu 280	ı Glı	g cto 1 Let	aac Asi	c cto n Leu	g too 1 Set 28	cac His	1406
aad	c aac n Asi	c cto	g ato	: Se	g cto	g cco	c cac	gad Asp 295	) Let	tto Phe	e Thi	g cco	c cto Lev 300	ı Hi:	e ege s Arg	1454

ctc Leu	gag Glu	ege Arg 305	gtg Val	cac His	ctc Leu	aac Asn	cac His 310	aac Asn	ccc Pro	tgg Trp	cat His	tgc Cys 315	aac Asn	tgc Cys	gac Asp	150	02
gtg Val	ctc Leu 320	tgg Trp	ctg Leu	agc Ser	tgg Trp	tgg Trp 325	ctc Leu	aag Lys	gag Glu	acg Thr	gtg Val 330	ccc Pro	agc Ser	aac Asn	acg Thr	155	50
acg Thr 335	tgc Cys	tgc Cys	gcc Ala	cgc Arg	tgt Cys 340	cat His	gcg Ala	ccc Pro	gcc Ala	ggc Gly 345	ctc Leu	aag Lys	GJA GGG	cgc Arg	tac Tyr 350	159	98
att Ile	ggg Gly	gag Glu	ctg Leu	gac Asp 355	cag Gln	tcg Ser	cat His	ttc Phe	acc Thr 360	tgc Cys	tat Tyr	gcg Ala	ccc Pro	gtc Val 365	atc Ile	16	46
gtg Val	gag Glu	ccg Pro	ccc Pro 370	acg Thr	gac Asp	ctc Leu	aac Asn	gtc Val 375	acc Thr	gag Glu	ggc Gly	atg Met	gct Ala 380	gcc Ala	gag Glu	16	94
ctc Leu	aaa Lys	tgc Cys 385	cgc Arg	acg Thr	ggc Gly	acc Thr	tcc Ser 390	atg Met	acc Thr	tcc Ser	gtc Val	aac Asn 395	tgg Trp	ctg Leu	acg Thr	17	42
ccc Pro	aac Asn 400	ggc Gly	acc Thr	ctc Leu	atg Met	acc Thr 405	cac His	ggc Gly	tcc Ser	tac Tyr	cgc Arg 410	gtg Val	cgc Arg	atc Ile	tcc Ser	17	90
gtc Val 415	Leu	cat His	gac Asp	ggc Gly	acg Thr 420	ctt Leu	aac Asn	ttc Phe	acc Thr	aac Asn 425	gtc Val	acc Thr	gtg Val	cag Gln	gac Asp 430	18	38
acg Thr	ggc Gly	cag Gln	tac Tyr	acg Thr 435	Cys	atg Met	gtg Val	acg Thr	aac Asn 440	Ser	gcc Ala	ggc Gly	aac Asn	acc Thr 445	Thr	18	86
gcc Ala	tcg Ser	gcc Ala	acg Thr 450	Leu	aac Asn	gtc Val	tcg Ser	gcc Ala 455	Val	gac	ccc Pro	gtg Val	gcg Ala 460	. Ala	Gly	19	934
ggc Gly	acc Thr	ggc Gly 465	Ser	ggc	ggg Gly	ggc	ggc Gly 470	Pro	Gly	ggc Gly	agt Ser	ggt Gly 475	, GTA	gtt Val	gga Gly	19	982
ggg Gly	ggc Gly 480	Ser	ggc	ggc Gly	tac Tyr	Thr 485	Tyr	ttc Phe	acc Thr	acç Thr	gtg Val 490	Thr	gtg Val	gag Glu	acc Thr	20	030
ctg Leu 495	Glu	acg Thr	Glr	ccc Pro	gga Gly 500	Glu	gag Glu	gcc Ala	cto Lev	g caç i Glr 505	n Pro	g cgg	G17	aco Thi	g gag Glu 510	20	078
aag Lys	gaa Glu	a ccg	cca Pro	ggg Gl <sub>y</sub> 515	Pro	aco Thr	aca Thr	gac Asp	ggt Gl <sub>3</sub> 520	y Val	tgg L Trp	ggt Gly	ggg Gly	g gg 7 Gly 525	cgg Arg	2	126
cct Pro	Gly	g gad / Asp	gcç Ala 530	a Ala	ggc Gly	cct Pro	gco Ala	tcg Ser 535	: Sei	tc1	aco Thi	e aco	g gca c Ala 540	a Pro	gee Ala	2:	174

ccg Pro	ege Arg	tcc Ser 545	tcg Ser	cgg Arg	ecc Pro	acg Thr	gag Glu 550	aag Lys	gcg Ala	ttc Phe	acg Thr	gtg Val 555	Pro	atc Ile	acg Thr	2222
gat Asp	gtg Val 560	acg Thr	gag Glu	aac Asn	gee Ala	ctc Leu 565	aag Lys	gac Asp	ctg Leu	gac Asp	gac Asp 570	gtc Val	atg Met	aag Lys	acc Thr	2270
acc Thr 575	aaa Lys	atc Ile	atc Ile	atc Ile	ggc Gly 580	tgc Cys	ttc Phe	gtg Val	gcc Ala	atc Ile 585	acg Thr	ttc Phe	atg Met	gcc Ala	geg Ala 590	2318
gtg Val	atg Met	ctc Leu	gtg Val	gcc Ala 595	ttc Phe	tac Tyr	aag Lys	ctg <b>L</b> eu	cgc Arg 600	aag Lys	cag Gln	cac His	cag Gln	ctc Leu 605	cac His	2366
aag Lys	cac His	cac His	ggg Gly 610	ccc Pro	acg Thr	cgc Arg	acc Thr	gtg Val 615	gag Glu	atc Ile	atc Ile	aac Asn	gtg Val 620	gag Glu	gac Asp	2414
gag Glu	ctg Leu	ecc Pro 625	gcc Ala	gcc Ala	tcg Ser	gcc Ala	gtg Val 630	tcc Ser	gtg Val	gcc Ala	gcc Ala					2450
<21 <21 <21 <21	1> 2>	2 634 PRT homo	sap	iens												
<40	0>	2														
Met 1	Ala	Arg	Ala	Arg 5	Gly	Ser	Pro	Cys	Pro 10	Pro	Leu	Pro	Pro	Gly 15	Arg	
Met	Ser	Trp	Pro 20	His	Gly	Ala	Leu	Leu 25	Phe	Leu	Trp	Leu	Phe 30	Ser	Pro	
Pro	Leu	Gly 35	Ala	Gly	Gly	Gly	Gly 40	Val	Ala	Val.	Thr	Ser 45	Ala	Ala	Gly	
Gly	Gly 50	Ser	Pro	Pro	Ala	Thr 55	Ser	Cys	Pro	Val	Ala 60	Cys	Ser	Cys	Ser	
Asn 65	Gln	Ala	Ser	Arg	Val 70	Ile	Cys	Thr	Arg	Arg 75	Asp	Leu	Ala	Glu	val 80	
Pro	Ala	Ser	Ile	Pro 85	Val	. Asr	Thr	Arg	90	Lev	Asn	Leu	Glr	95	a Asn	
Gly	, Ile	: Glr	Val		Arg	Thr	Asp	Th:	Phe	e Lys	His	Let	Arg 110	g His	s Leu	
Glu	ıle	e Lev	ı Glr	ı Lev	Ser	Lys	s Asr	ı Lei	ı Val	L Arç	J Lys	s Ile	Glu	ı Val	l Gly	

115 120 125

Ala Phe Asn Gly Leu Pro Ser Leu Asn Thr Leu Glu Leu Phe Asp Asn 130 135 140

Arg Leu Thr Thr Val Pro Thr Gln Ala Phe Glu Tyr Leu Ser Lys Leu 145  $\,$  150  $\,$  155  $\,$  160

Arg Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser Tyr 165 170 175

Ala Phe Asn Arg Val Pro Ser Leu Arg Arg Leu Asp Leu Gly Glu Leu 180 185 190

Lys Arg Leu Glu Tyr Ile Ser Glu Ala Ala Phe Glu Gly Leu Val Asn 195 200 205

Leu Arg Tyr Leu Asn Leu Gly Met Cys Asn Leu Lys Asp Ile Pro Asn 210  $\,$  220  $\,$ 

Leu Thr Ala Leu Val Arg Leu Glu Glu Leu Glu Leu Ser Gly Asn Arg 225  $\phantom{\bigg|}$  230  $\phantom{\bigg|}$  235  $\phantom{\bigg|}$  240

Leu Asp Leu Ile Arg Pro Gly Ser Phe Gln Gly Leu Thr Ser Leu Arg 245 250 255

Lys Leu Trp Leu Met His Ala Gln Val Ala Thr Ile Glu Arg Asn Ala 260 265 270

Phe Asp Asp Leu Lys Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn 275  $\phantom{0}280$ 

Leu Met Ser Leu Pro His Asp Leu Phe Thr Pro Leu His Arg Leu Glu 290 295 300

Arg Val His Leu Asn His Asn Pro Trp His Cys Asn Cys Asp Val Leu 305 \$310\$ 315 320

Trp Leu Ser Trp Trp Leu Lys Glu Thr Val Pro Ser Asn Thr Thr Cys 325 330 335

Cys Ala Arg Cys His Ala Pro Ala Gly Leu Lys Gly Arg Tyr Ile Gly 340 345 350

Glu Leu Asp Gln Ser His Phe Thr Cys Tyr Ala Pro Val Ile Val Glu 355 360 365 Pro Pro Thr Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu Leu Lys 370 375 380

Cys Arg Thr Gly Thr Ser Met Thr Ser Val Asn Trp Leu Thr Pro Asn 385 390 395

Gly Thr Leu Met Thr His Gly Ser Tyr Arg Val Arg Ile Ser Val Leu 405 410 415

His Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp Thr Gly 420 425 430

Gln Tyr Thr Cys Met Val Thr Asn Ser Ala Gly Asn Thr Thr Ala Ser 435 440 445

Gly Ser Gly Gly Gly Gly Pro Gly Gly Ser Gly Gly Val Gly Gly Gly 465 \$470\$

Ser Gly Gly Tyr Thr Tyr Phe Thr Thr Val Thr Val Glu Thr Leu Glu 485 490 495

Thr Gln Pro Gly Glu Glu Ala Leu Gln Pro Arg Gly Thr Glu Lys Glu 500 505 510

Pro Pro Gly Pro Thr Thr Asp Gly Val Trp Gly Gly Gly Arg Pro Gly 515 520 525

Asp Ala Ala Gly Pro Ala Ser Ser Ser Thr Thr Ala Pro Ala Pro Arg 530 535 540

Ser Ser Arg Pro Thr Glu Lys Ala Phe Thr Val Pro Ile Thr Asp Val 545 550 555 560

Thr Glu Asn Ala Leu Lys Asp Leu Asp Asp Val Met Lys Thr Thr Lys 565 570

Ile Ile Ile Gly Cys Phe Val Ala Ile Thr Phe Met Ala Ala Val Met  $580 \hspace{1.5cm} 585 \hspace{1.5cm} 590 \hspace{1.5cm}$ 

Leu Val Ala Phe Tyr Lys Leu Arg Lys Gln His Gln Leu His Lys His 595 600 605

His Gly Pro Thr Arg Thr Val Glu Ile Ile Asn Val Glu Asp Glu Leu 610 620

Pro Ala Ala Ser Ala Val Ser Val Ala Ala 625 630

<210> 3

<211> 640 <212> PRT

<213> Homo sapiens

<400> 3

Met Leu Asn Lys Met Thr Leu His Pro Gln Gln Ile Met Ile Gly Pro 1 10 15

Arg Phe Asn Arg Ala Leu Phe Asp Pro Leu Leu Val Val Leu Leu Ala 20 25 30

Leu Gln Leu Val Val Ala Gly Leu Val Arg Ala Gln Thr Cys Pro 35 40 45

Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val Ile Cys Val Arg  $50 \hspace{1cm} 60 \hspace{1cm}$ 

Lys Asn Leu Arg Glu Val Pro Asp Gly Ile Ser Thr Asn Thr Arg Leu 65  $\phantom{0}$  70  $\phantom{0}$  75  $\phantom{0}$  80

Leu Asn Leu His Glu Asn Gln Ile Gln Ile Ile Lys Val Asn Ser Phe 85 90 95

Lys His Leu Arg His Leu Glu Ile Leu Gln Leu Ser Arg Asn His Ile 100 105 110

Arg Thr Ile Glu Ile Gly Ala Phe Asn Gly Leu Ala Asn Leu Asn Thr 115 120 125

Leu Glu Leu Phe Asp Asn Arg Leu Thr Thr Ile Pro Asn Gly Ala Phe 130 135 140

Val Tyr Leu Ser Lys Leu Lys Glu Leu Trp Leu Arg Asn Asn Pro Ile 145 150 155 160

Glu Ser Ile Pro Ser Tyr Ala Phe Asn Arg Ile Pro Ser Leu Arg Arg

Leu Asp Leu Gly Glu Leu Lys Arg Leu Ser Tyr Ile Ser Glu Gly Ala 180 185 190

Phe Glu Gly Leu Ser Asn Leu Arg Tyr Leu Asn Leu Ala Met Cys Asn 195 200 205

Leu Arg Glu Ile Pro Asn Leu Thr Pro Leu Ile Lys Leu Asp Glu Leu 210 215 220

Asp Leu Ser Gly Asn His Leu Ser Ala Ile Arg Pro Gly Ser Phe Gln 225 230 235

- Gly Leu Met His Leu Gln Lys Leu Trp Met Ile Gln Ser Gln Ile Gln 245 250 255
- Val Ile Glu Arg Asn Ala Phe Asp Asn Leu Gln Ser Leu Val Glu Ile  $260 \hspace{1cm} 265 \hspace{1cm} 270 \hspace{1cm}$
- Asn Leu Ala His Asn Asn Leu Thr Leu Leu Pro His Asp Leu Phe Thr 275 280 285
- Pro Leu His His Leu Glu Arg Ile His Leu His His Asn Pro Trp Asn 290 295 300
- Cys Asn Cys Asp Ile Leu Trp Leu Ser Trp Trp Ile Lys Asp Met Ala 305 \$310\$
- Pro Ser Asn Thr Ala Cys Cys Ala Arg Cys Asn Thr Pro Pro Asn Leu 325 330 335
- Lys Gly Arg Tyr Ile Gly Glu Leu Asp Gln Asn Tyr Phe Thr Cys Tyr
- Met Ala Ala Glu Leu Lys Cys Arg Ala Ser Thr Ser Leu Thr Ser Val
- Ser Trp Ile Thr Pro Asn Gly Thr Val Met Thr His Gly Ala Tyr Lys 385 390 395 400
- Val Arg Ile Ala Val Leu Ser Asp Gly Thr Leu Asn Phe Thr Asn Val 405  $\phantom{000}410$   $\phantom{000}415$
- Thr Val Gln Asp Thr Gly Met Tyr Thr Cys Met Val Ser Asn Ser Val
- Gly Asn Thr Thr Ala Ser Ala Thr Leu Asn Val Thr Ala Ala Thr Thr 435 440 445
- Thr Pro Phe Ser Tyr Phe Ser Thr Val Thr Val Glu Thr Met Glu Pro  $450 \ \ \, 460$
- Ser Gln Asp Glu Ala Arg Thr Thr Asp Asn Asn Val Gly Pro Thr Pro
- Val Val Asp Trp Glu Thr Thr Asn Val Thr Thr Ser Leu Thr Pro Gln
  485 490 495
- Ser Thr Arg Ser Thr Glu Lys Thr Phe Thr Ile Pro Val Thr Asp Ile 500 505 510
- Asn Ser Gly Ile\_Pro Gly Ile Asp Glu Val Met Lys Thr Thr Lys Ile 515 520 525
- Ile Ile Gly Cys Phe Val Ala Ile Thr Leu Met Ala Ala Val Met Leu  $530 \hspace{1.5cm} 535 \hspace{1.5cm} 540$
- Val Ile Phe Tyr Lys Met Arg Lys Gln His His Arg Gln Asn His His 545 550 555
- Ala Pro Thr Arg Thr Val Glu Ile Ile Asn Val Asp Asp Glu Ile Thr

565 570 575

Gly Asp Thr Pro Met Glu Ser His Leu Pro Met Pro Ala Ile Glu His

Glu His Leu Asn His Tyr Asn Ser Tyr Lys Ser Pro Phe Asn His Thr 595 600 605

Leu Leu Ile Arg Met Asn Ser Lys Asp Asn Val Gln Glu Thr Gln Ile 625  $\phantom{\bigg|}630\phantom{\bigg|}630\phantom{\bigg|}635\phantom{\bigg|}$ 

<210> 4

<211> 361

<212> PRT <213> Bos taurus

<400> 4

Met Ala Arg Pro Met Leu Leu Leu Ser Leu Ser Leu Gly Leu Leu Ala 1 5 10 15

Ser Leu Leu Pro Ala Leu Ala Ala Cys Pro Gln Asn Cys His Cys His 20 25 30

Ser Asp Leu Gln His Val Ile Cys Asp Lys Val Gly Leu Gln Lys Ile 35 40 45

Pro Lys Val Ser Glu Lys Thr Lys Leu Leu Asn Leu Gln Arg Asn Asn 50 60

Phe Pro Val Leu Ala Thr Asn Ser Phe Arg Ala Met Pro Asn Leu Val 65  $\phantom{000}70\phantom{000}$  70  $\phantom{0000}70\phantom{0000}$  80  $\phantom{0000}80\phantom{0000}$ 

Ser Leu His Leu Gln His Cys Gln Ile Arg Glu Val Ala Ala Gly Ala 85 90 95

Phe Arg Gly Leu Lys Gln Leu Ile Tyr Leu Tyr Leu Ser His Asn Asp 100 105 110

Ile Arg Val Leu Arg Ala Gly Ala Phe Asp Asp Leu Thr Glu Leu Thr 115  $$\rm 120$$  125

Tyr Leu Tyr Leu Asp His Asn Lys Val Thr Glu Leu Pro Arg Gly Leu

Leu Ser Pro Leu Val Asn Leu Phe Ile Leu Gln Leu Asn Asn Asn Lys 145 150 155 160

Ile Arg Glu Leu Arg Ser Gly Ala Phe Gln Gly Ala Lys Asp Leu Arg \$165\$

Trp Leu Tyr Leu Ser Glu Asn Ser Leu Ser Ser Leu Gln Pro Gly Ala 180  $$180\$ 

Leu Asp Asp Val Glu Asn Leu Ala Lys Phe Tyr Leu Asp Arg Asn Gln
195 200 205

Leu Ser Ser Tyr Pro Ser Ala Ala Leu Ser Lys Leu Arg Val Val Glu

210

215

220

Glu Leu Lys Leu Ser His Asn Pro Leu Lys Ser Ile Pro Asp Asn Ala 225 230 235

Phe Gln Ser Phe Gly Arg Tyr Leu Glu Thr Leu Trp Leu Asp Asn Thr 245 250 255

Asn Leu Glu Lys Phe Ser Asp Gly Ala Phe Leu Gly Val Thr Thr Leu 260 265 270

Lys His Val His Leu Glu Asn Asn Arg Leu His Gln Leu Pro Ser Asn 275 280 285

Phe Pro Phe Asp Ser Leu Glu Thr Leu Thr Leu Thr Asn Asn Pro Trp 290 295 300

Lys Cys Thr Cys Gln Leu Arg Gly Leu Arg Arg Trp Leu Glu Ala Lys  $305 \hspace{1.5cm} 310 \hspace{1.5cm} 315 \hspace{1.5cm} 320 \hspace{1.5cm}$ 

Thr Ser Arg Pro Asp Ala Thr Cys Ala Ser Pro Ala Lys Phe Arg Gly 325 330 335

Lys Arg Ser Lys Lys Ala Gly Arg His

<210> 5

PU B

10

nu nu

Ö

<211> 796 <212> PRT

<213> Rattus norvegicus

<400> 5

Met Ser Gly Ile Gly Trp Gln Thr Leu Ser Leu Ser Leu Ala Leu Val

Leu Ser Ile Leu Asn Lys Val Ala Pro His Ala Cys Pro Ala Gln Cys 20 25 30

Ser Cys Ser Gly Ser Thr Val Asp Cys His Gly Leu Ala Leu Arg Ile 35 40 45

Val Pro Arg Asn Ile Pro Arg Asn Thr Glu Arg Leu Asp Leu Asn Gly

Asn Asn Ile Thr Arg Ile Thr Lys Thr Asp Phe Ala Gly Leu Arg His 65 70 75 80

Leu Arg Ile Leu Gln Leu Met Glu Asn Lys Ile Ser Thr Ile Glu Arg 85 90 95

Gly Ala Phe His Asp Leu Lys Glu Leu Glu Arg Leu Arg Leu Asn Arg

Asn Asn Leu Gln Leu Phe Pro Glu Leu Leu Phe Leu Gly Thr Ala Lys

Leu Tyr Arg Leu Asp Leu Ser Glu Asn Gln Ile Gln Ala Ile Pro Arg

	130					135					140				
Lys	Ala	Phe	Arg	Gly	Ala	Val	Asp	Ile	Lys	Asn	Leu	Gln	Leu	Asp	Tyr

145 150 155 160

Asn Gln Ile Ser Cys Ile Glu Asp Gly Ala Phe Arg Ala Leu Arg Asp 165 170 175

Leu Glu Val Leu Thr Leu Asn Asn Asn Asn Ile Thr Arg Leu Ser Val 180 185 190

Ala Ser Phe Asn His Met Pro Lys Leu Arg Thr Phe Arg Leu His Ser 195 200 205

Asn Asn Leu Tyr Cys Asp Cys His Leu Ala Trp Leu Ser Asp Trp Leu 210 215 220

Arg Gln Arg Pro Arg Val Gly Leu Tyr Thr Gln Cys Met Gly Pro Ser 225  $\phantom{\bigg|}230\phantom{\bigg|}230\phantom{\bigg|}235\phantom{\bigg|}$ 

His Leu Arg Gly His Asn Val Ala Glu Val Gln Lys Arg Glu Phe Val 245 250 255

Cys Ser Asp Glu Glu Glu Gly His Gln Ser Phe Met Ala Pro Ser Cys

Ser Val Leu His Cys Pro Ile Ala Cys Thr Cys Ser Asn Asn Ile Val 275 280 285

Asp Cys Arg Gly Lys Gly Leu Thr Glu Ile Pro Thr Asn Leu Pro Glu 290 300

Thr Ile Thr Glu Ile Arg Leu Glu Gln Asn Ser Ile Arg Val Ile Pro 305 \$310\$ \$315

Pro Gly Ala Phe Ser Pro Tyr Lys Lys Leu Arg Arg Leu Asp Leu Ser 325 330 335

Asn Asn Gln Ile Ser Glu Leu Ala Pro Asp Ala Phe Gln Gly Leu Arg 340 350 350

Ser Leu Asn Ser Leu Val Leu Tyr Gly Asn Lys Ile Thr Glu Leu Pro 355 360 365

Lys Ser Leu Phe Glu Gly Leu Phe Ser Leu Gln Leu Leu Leu Leu Asn 370 380

Ala Asn Lys Ile Asn Cys Leu Arg Val Asp Ala Phe Gln Asp Leu His

385 390 400
Asn Leu Asn Leu Ser Leu Tyr Asp Asn Lys Leu Gln Thr Val Ala

Lys Gly Thr Phe Ser Ala Leu Arg Ala Ile Gln Thr Met His Leu Ala

Gln Asn Pro Phe Ile Cys Asp Cys His Leu Lys Trp Leu Ala Asp Tyr

Leu His Thr Asn Pro Ile Glu Thr Ser Gly Ala Arg Cys Thr Ser Pro 450 455 460

- Arg Arg Leu Ala Asn Lys Arg Ile Gly Gln Ile Lys Ser Lys Lys Phe  $_{465}$  Arg Cys Ser Gly Thr Glu Asp Tyr Arg Ser Lys Leu Ser Gly Asp Cys
- Phe Ala Asp Leu Ala Cys Pro Glu Lys Cys Arg Cys Glu Gly Thr Thr
- Val Asp Cys Ser Asn Gln Lys Leu Asn Lys Ile Pro Asp His Ile Pro
- Gln Tyr Thr Ala Glu Leu Arg Leu Asn Asn Asn Glu Phe Thr Val Leu
- Glu Ala Thr Gly Ile Phe Lys Lys Leu Pro Gln Leu Arg Lys Ile Asn 545 550 555 560
- Leu Ser Asn Asn Lys Ile Thr Asp Ile Glu Glu Gly Ala Phe Glu Gly 575
- Ala Ser Gly Val Asn Glu Ile Leu Leu Thr Ser Asn Arg Leu Glu Asn 580 585 590
- Val Gln His Lys Met Phe Lys Gly Leu Glu Ser Leu Lys Thr Leu Met 595 600 605
- Leu Arg Ser Asn Arg Ile Ser Cys Val Gly Asn Asp Ser Phe Thr Gly 610 615 620
- Leu Gly Ser Val Arg Leu Leu Ser Leu Tyr Asp Asn Gln Ile Thr Thr 625  $\phantom{000}630\phantom{000}635\phantom{000}$  640
- Val Ala Pro Gly Ala Phe Gly Thr Leu His Ser Leu Ser Thr Leu Asn 645 650 655
- Leu Leu Ala Asn Pro Phe Asn Cys Asn Cys His Leu Ala Trp Leu Gly 660 665 670
- Glu Trp Leu Arg Arg Lys Arg Ile Val Thr Gly Asn Pro Arg Cys Gln 675 685
- Lys Pro Tyr Phe Leu Lys Glu Ile Pro Ile Gln Asp Val Ala Ile Gln 690 695 700
- Asp Phe Thr Cys Asp Asp Gly Asn Asp Asp Asn Ser Cys Ser Pro Leu 705 710 715 720
- Ser Arg Cys Pro Ser Glu Cys Thr Cys Leu Asp Thr Val Val Arg Cys 725  $\phantom{000}730$   $\phantom{000}735$
- Ser Asn Lys Gly Leu Lys Val Leu Pro Lys Gly Ile Pro Arg Asp Val 740 745 750
- Thr Glu Leu Tyr Leu Asp Gly Asn Gln Phe Thr Leu Val Pro Glu Phe 755  $\phantom{000}760$   $\phantom{0000}765$
- Pro Phe Phe Phe Phe Phe Phe Phe Phe Leu Ser Ile Phe Phe Leu Phe Glu 770

## Thr Gly Ser Gly Gly Val Ala Ser Ala Leu Glu Tyr 785 790 795

<210> 6 <211> 2083

<212> DNA

<213> homo sapiens

<400>

caggecegge egeageceeg eecceegege eteccegeag egggeettge acceeaaatt 60 120 cctgagecte attggggggg tectecece aegggeeggg catgetgeee eeeggaagga 180 acceptate tegetecece cagegtecae geggageatg aacattgagg atggegegtg 240 cocqcqqctc cocqtqccc cccqctqccq cccqqtagqa tqtcctqqcc ccacqqqgca ttgctcttcc tctggctctt ctccccaccc ctgggggccg gtggaggtgg agtggccgtg 300 acqtetgeeg ceggagggg cteceegeeg gecaceteet geecegtgge etgeteetge 360 ageaaccagg ccagccgggt gatctgcaca cggagagacc tggccgaggt cccagccagc 420 480 atcocqqtca acacqcqqta cctqaacctq caaqaqaacq qcatccaqqt qatccqqacq 540 gacacgttca agcacctgcg gcacctggag attctgcagc tgagcaagaa cctggtgcgc 600 aagatcgagg tgggcgcctt caacgggctg cccagcctca acacgctgga gctttttgac aaccqqctqa ccacqqtqcc cacqcaqqcc ttcqaqtacc tqtccaaqct qcqqqaqctc 660 720 tggctgcgga acaaccccat cgagagcatc ccctcctacg ccttcaaccg cgtgcctcg 780 ctgeggegee tggaeetggg egageteaag eggetggaat acatetegga ggeggeette 840 gaggggetgg teaacetgeg etaceteaac etgggcatgt gcaaceteaa ggacateece 900 aacctgacgg coctggtgcg cctggaggag ctggagctgt cgggcaaccg gctggacctg 960 atcogccogg getectteca gggteteace ageetgegea agetgtgget catgeaegee 1020 caggtageca ccategageg caaegeette gaegacetea agtegetgga ggageteaae 1080 ctgtcccaca acaacctgat gtcgctgccc cacgacctct tcacgcccct gcaccgcctc gagegegtge accteaacca caacceetgg cattgeaact gegaegtget etggetgage 1140 1200 tggtggetca aggagacggt gcccagcaac acgacgtgct gcgcccgctg tcatgcgccc 1260 geeggeetea aggggegeta cattggggag etggaceagt egeattteae etgetatgeg 1320 congteating togagonic canonicate aangteating aggreating togangete aaatqccqca cqqqcacctc catqacctcc qtcaactqqc tqacqcccaa cqqcaccctc 1380 atgaccacg getectaccg egtgegeate tecgteetge atgacggeae gettaaette 1440 accaacgtca ccgtgcagga cacgggccag tacacgtgca tggtgacgaa ctcagccggc 1500 aacaccaccg coteggccac gotcaacgto toggccgtgg accccgtggc ggccggggc 1560

accggcagcg gcggggggg ccctgggggc agtggtggtg ttggaggggg cagtggcggc	1620
tacacctact tcaccacggt gaccgtggag accetggaga cgcagcccgg agaggaggcc	1680
ctgcagccgc gggggacgga gaaggaaccg ccagggccca cgacagacgg tgtctggggt	1740
gggggccggc ctggggacgc ggccggccct gcctcgtctt ctaccacggc acccgccccg	1800
egeteetege ggeccaegga gaaggegtte aeggtgecca teaeggatgt gaeggagaac	1860
gccctcaagg acctggacga cgtcatgaag accaccaaaa tcatcatcgg ctgcttcgtg	1920
gccatcacgt tcatggccgc ggtgatgctc gtggccttct acaagctgcg caagcagcac	1980
cagetecaea ageaecaegg geecaegege aeegtggaga teateaaegt ggaggaegag	2040
ctgcccgccg cctcggccgt gtccgtggcc gccgcggccg ccg	2083
<210> 7 <211> 22 <212> DNA <213> Homo sapiens	
<400> 7 cgtcatgaag accaccaaaa tc	22
<210> 8 <211> 19 <212> DNA <213> Homo sapiens	
<400> 8 geagetegte etecaegtt	19
<210> 9 <211> 80 <212> DNA <213> Homo sapiens	
<400> 9 gttctcttgc aggttcaggt accqcgtgtt gaccgggatg ctggctggga cctcggccag	60
gtototocgt gtgcagatca	80
geocococyc gegoagarca	00
<210> 10	
<400> 10	
Met Cys Phe Ile Pro Leu Val Cys Trp Ile Val Cys Thr Gly Leu Lys 1 $10$ 10 $15$	
Gln Gln Met Glu Ser Gly Lys Ser Leu Ala Gln Thr Ser Lys Thr Ser 20 25 30	

- Thr Ala Val Tyr Val Phe Phe Leu Ser Ser Leu Leu Gln Pro Arg Gly 35 
  Gly Ser Gln Glu His Gly Leu Cys Ala His Leu Trp Gly Leu Cys Ser 50 
  Leu Ala Ala Asp Gly Ile Trp Asn Gln Lys Ile Leu Phe Glu Glu Ser
- Asp Leu Arg Asn His Gly Leu Gln Lys Ala Asp Val Ser Ala Phe Leu
- Phe Ile His Met Thr Phe Gln Glu Phe Phe Ala Ala Met Tyr Tyr Leu 115 120 125
- Leu Glu Glu Glu Lys Glu Gly Arg Thr Asn Val Pro Gly Ser Arg Leu 130 135 140
- Phe Glu Lys Gly Tyr Leu Ile Phe Val Val Arg Phe Leu Phe Gly Leu 165 \$170\$
- Val Asn Gln Glu Arg Thr Ser Tyr Leu Glu Lys Lys Leu Ser Cys Met  $180 \\ \hspace*{1.5cm} 185 \\ \hspace*{1.5cm} 190 \\ \hspace*{1.5cm}$
- Ile Ser Gln Gln Ile Arg Leu Glu Leu Leu Lys Trp Ile Glu Val Lys  $195 \hspace{1.5cm} 200 \hspace{1.5cm} 205 \hspace{1.5cm}$
- Ala Lys Ala Lys Lys Leu His Asp Gln Pro Ser Gln Leu Glu Leu Phe 210 215 220
- Tyr Cys Leu Tyr Glu Met Gln Glu Glu Asp Phe Val Gln Arg Ala Met 225 230 235
- Asp Tyr Phe Pro Lys Ile Glu Ile Asn Leu Ser Thr Arg Met Asp His 245  $\phantom{\bigg|}250\phantom{\bigg|}$
- Met Val Ser Ser Phe Cys Ile Glu Asn Cys His Arg Val Glu Ser Leu 260 265 270
- Ser Leu Gly Phe Leu His Asn Met Pro Lys Glu Glu Glu Glu Glu Glu Glu 275 280 285
- Lys Glu Gly Arg His Leu Asp Met Val Gln Cys Val Leu Pro Ser Ser 290 295 300
- Ser His Ala Ala Cys Ser His Gly Leu Gly Arg Cys Gly Leu Ser His 305  $\phantom{\bigg|}$  310  $\phantom{\bigg|}$  315  $\phantom{\bigg|}$  320
- Glu Cys Cys Phe Asp Ile Ser Leu Val Leu Ser Ser Asn Gln Lys Leu 325 330 335
- Val Glu Leu Asp Leu Ser Asp Asn Ala Leu Gly Asp Phe Gly Ile Arg
- Leu Leu Cys Val Gly Leu Lys His Leu Leu Cys Asn Leu Lys Lys Leu

355 360 365

Trp Leu Val Asn Ser Ala Leu Arg Gln Ser Val Val Gln Leu Cys Pro

Arg Tyr Ser Ala Leu Ile Arg Ile Ser Arg Thr Phe Thr Ala Arg Gln

His Ser Arg Arg Gln Gly Ile Lys Leu Leu Cys Glu Gly Leu Leu His

Pro Asp Cys Lys Leu Gln Val Leu Glu Leu Asp Asn Cys Asn Leu Thr

Ser His Cys Cys Trp Asp Leu Ser Thr Leu Leu Thr Ser Ser Gln Ser 440

Leu Arg Lys Leu Ser Leu Gly Asn Asn Asp Leu Gly Asp Leu Gly Val

Met Met Phe Cys Glu Val Leu Lys Gln Gln Ser Cys Leu Leu Gln Asn

Leu Gly Leu Ser Glu Met Tyr Phe Asn Tyr Glu Thr Lys Ser Ala Leu

Glu Thr Leu Gln Glu Glu Lys Pro Glu Leu Thr Val Val Phe Glu Pro 505

Ser Tro

<210> 11

<211> 1429 <212> PRT

<213> homo sapiens

<400> 11

Met Ala Gly Gly Ala Trp Gly Arg Leu Ala Cys Tyr Leu Glu Phe Leu

Lys Lys Glu Glu Leu Lys Glu Phe Gln Leu Leu Ala Asn Lys Ala

His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln

Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe

Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys

115 120 125

Thr Gln Gly Ser Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser 135 Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser Leu Leu Tyr Gln Ala Leu Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu Asp Glu Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr 235 Pro Pro Gln Ala His Thr Ser Leu Gln Pro His His His Pro Trp Glu Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Gln Arg Pro His Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln

Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile  $435 \hspace{1.5cm} 440 \hspace{1.5cm} 445$ 

Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln 455 Asn Leu Ile Pro Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly 470 475 Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp Glu Arg Gln Ala Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu Leu Trp Ala Leu Cys Leu Val Pro Trp Val Ser Trp Leu Ala Cys Thr Cys Leu Met Gln Gln Met Lys Arg Lys Glu Lys Leu Thr Leu Thr Ser Lys Thr Thr Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln Ala Gln Pro Leu Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala Glu Gly Ile Trp Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg Lys His Gly Leu Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly 600 Ile Leu Gln Glu His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu Cys Phe Gln Glu Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu 630 635 Lys Gly Arg Gly Lys His Ser Asn Cys Ile Ile Asp Leu Glu Lys Thr Leu Glu Ala Tyr Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg Phe Leu Leu Gly Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn Ile Phe His Cys Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val Pro Ser Leu Gln Leu Leu Gln Pro His Ser Leu Glu Ser Leu His 705 Cys Leu Tyr Glu Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala

His Phe Glu Glu Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu 740 745 750

Val Cys Thr Phe Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln 755 760 765

- Leu Ile Glu Gly Arg Gln His Arg Ser Thr Trp Ser Pro Thr Met Val
- Val Leu Phe Arg Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu 785  $\phantom{\bigg|}790\phantom{\bigg|}790\phantom{\bigg|}795\phantom{\bigg|}795\phantom{\bigg|}$
- Phe Ser Val Leu Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser 805 810 815
- Gly Asn Ser Leu Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu 820 825 830
- Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly 835  $\phantom{0}840$   $\phantom{0}845$
- Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn 850 855 860
- Gln Thr Leu Thr Glu Leu Asp Leu Ser Phe Asn Val Leu Thr Asp Ala 865 870 875 880
- Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu 885 890 895
- Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln  $900 \hspace{1.5cm} 905 \hspace{1.5cm} 910 \hspace{1.5cm}$
- Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp 915 920 925
- Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu 930 940
- Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln 945 950 950 955
- Thr Thr Leu Ser Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln 965 970 975
- Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met  $980 \hspace{1.5cm} 985 \hspace{1.5cm} 990$
- Thr Pro Thr Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser 995 1000 1005
- Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His 1010 1015 1020
- Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe 1025 1030 1035
- Pro Ile Ala Glu Ile Ala Glu Glu Ser Ser Pro Glu Val Val Pro  $1040 \hspace{1.5cm} 1045 \hspace{1.5cm} 1050 \hspace{1.5cm}$
- His Thr Lys Pro Leu Gly Thr Asp Asp Asp Phe Trp Gly Pro Thr 1070 1075 1080
- Gly Pro Val Ala Thr Glu Val Val Asp Lys Glu Lys Asn Leu Tyr

	1085					1090					1095			
Arg	Val 1100	His	Phe	Pro	Va1	Ala 1105	Gly	Ser	Tyr	Arg	Trp 1110	Pro	Asn	Thi
Gly	Leu 1115	Cys	Phe	Va1	Met	Arg 1120	Glu	Ala	Val	Thr	Val 1125	Glu	Ile	Glı
Phe	Cys 1130	Val	Trp	Asp	G1n	Phe 1135	Leu	G1 y	Glu	Ile	Asn 1140	Pro	Gln	His
Ser	Trp 1145	Met	Val	Ala	Gly	Pro 1150	Leu	Leu	Asp	Ile	Lys 1155	Ala	Glu	Pro
Gly	Ala 1160	Val	Glu	Ala	Val	His 1165	Leu	Pro	His	Phe	Val 1170	Ala	Leu	Glr
G1y	Gly 1175	His	Val	Asp	Thr	Ser 1180	Leu	Phe	Gln	Met	Ala 1185	His	Phe	Lys
Glu	Glu 1190	Gly	Met	Leu	Leu	Glu 1195	Lys	Pro	Ala	Arg	Val 1200	Glu	Leu	His
His	Ile 1205	Val	Leu	Glu	Asn	Pro 1210	Ser	Phe	Ser	Pro	Leu 1215	Gly	Val	Lei
Leu	Lys 1220	Met	Ile	His	Asn	Ala 1225	Leu	Arg	Phe	Ile	Pro 1230	Val	Thr	Sei
Val	Val 1235	Leu	Leu	Tyr	His	Arg 1240	Val	His	Pro	Glu	Glu 1245	Val	Thr	Phe
His	Leu 1250	Tyr	Leu	Ile	Pro	Ser 1255	Asp	Cys	Ser	Ile	Arg 1260	Lys	Glu	Let
Glu	Leu 1265	Cys	Tyr	Arg	Ser	Pro 1270	Gly	Glu	Asp	Gln	Leu 1275	Phe	Ser	Glu
Phe	Tyr 1280	Val	Gly	His	Leu	Gly 1285	Ser	Gly	Ile	Arg	Leu 1290	Gln	Val	Lys
Asp	Lys 1295	Lys	Asp	Glu	Thr	Leu 1300	Val	Trp	Glu	Ala	Leu 1305	Va1	Lys	Pro
Gly	Asp 1310	Leu	Met	Pro	Ala	Thr 1315	Thr	Leu	Ile	Pro	Pro 1320	Ala	Arg	Ile
Ala	Val 1325	Pro	Ser	Pro	Leu	Asp 1330	Ala	Pro	Gln	Leu	Leu 1335	His	Phe	Val
Asp	Gln 1340	Tyr	Arg	Glu	Gln	Leu 1345	Ile	Ala	Arg	Val	Thr 1350	Ser	Val	Glu
Val	Val 1355	Leu	Asp	Lys	Leu	His 1360	Gly	Gln	Val	Leu	Ser 1365	G1n	Glu	Glr
Tyr	Glu 1370	Arg	Va1	Leu	Ala	G1u 1375	Asn	Thr	Arg	Pro	Ser 1380	Gln	Met	Arç

Lys Leu Phe Ser Leu Ser Gln Ser Trp Asp Arg Lys Cys Lys Asp 1385

```
Gly Leu Tyr Gln Ala Leu Lys Glu Thr His Pro His Leu Ile Met
    1400
                         1405
Glu Leu Trp Glu Lys Gly Ser Lys Lys Gly Leu Leu Pro Leu Ser
                        1420
Ser
<210> 12
<211> 8
<212> PRT
<213> bacteriophage T7
<400> 12
Asp Tyr Lys Asp Asp Asp Lys
<210>
      13
<211>
      733
<212>
      DNA
<213> homo sapiens
<400> 13
gggatccgga gcccaaatct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg
                                                                     60
aattegaggg tgeacegtea gtetteetet teeceecaaa acceaaggae acceteatga
                                                                    120
teteceggae teetgaggte acatgegtgg tggtggaegt aagceacgaa gaecetgagg
                                                                    180
teaagtteaa etggtaegtg gaeggegtgg aggtgeataa tgeeaagaea aageegeggg
                                                                    240
aggageagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact
                                                                   300
ggetgaatgg caaggagtac aagtgcaagg tetecaacaa ageceteeca acceecateg
                                                                   360
agaaaaccat ctccaaaqcc aaaqqqcaqc cccqaqaacc acaqqtqtac accctgcccc
                                                                    420
cateceggga tgagetgace aagaaccagg teageetgae etgeetggte aaaggettet
                                                                    480
                                                                   540
atecaagega categoogtg gagtgggaga gcaatgggca gccggagaac aactacaaga
ccacgcetcc cgtgctggac tecgacgget cettetteet etacagcaag etcaccgtgg
                                                                    600
                                                                    660
acaagagcag gtggcagcag gggaacgtet teteatgete cgtgatgcat gaggetetge
acaaccacta cacqcaqaaq agcctctccc tgtctccggg taaatgagtg cgacqgccgc
                                                                    720
                                                                    733
gactctagag gat
<210> 14
<211>
      14
<212> PRT
<213> Homo sapiens
<400> 14
```

Leu Lys Asp Ile Pro Asn Leu Thr Ala Leu Val Arg Leu Glu

```
5
                                   10
 <210> 15
 <211> 14
<212> PRT
 <213> Homo sapiens
 <400> 15
 Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn Leu Met Ser
                5
                                   10
 <210> 16
 <211> 14
 <212> PRT
 <213> Homo sapiens
 <400> 16
Glu Thr Val Pro Ser Asn Thr Thr Cys Cys Ala Arg Cys His
                5
<210> 17
 <211> 14
 <212> PRT
 <213> Homo sapiens
 <400> 17
 Pro Pro Thr Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu
                5
 <210> 18
 <211> 14
 <212> PRT
 <213> Homo sapiens
 <400> 18
 Asn Trp Leu Thr Pro Asn Gly Thr Leu Met Thr His Gly Ser
                 5
 <210> 19
 <211> 14
 <212> PRT
 <213> Homo sapiens
 <400> 19
 His Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp
                5
                                    10
 <210> 20
 <211> 14
 <212> PRT
 <213> Homo sapiens
 <400> 20
 Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp Thr Gly Gln
               5
```

```
<210> 21
<211> 14
<212> PRT
<213> Homo sapiens
<400> 21
Thr Asn Ser Ala Gly Asn Thr Thr Ala Ser Ala Thr Leu Asn
<210> 22
<211> 14
<212> PRT
<213> Homo sapiens
<400> 22
Ala Ser Ala Thr Leu Asn Val Ser Ala Val Asp Pro Val Ala
                                   10
<210> 23
<211> 13
<212> PRT
<213> Homo sapiens
<400> 23
Ser Arg Val Ile Cys Thr Arg Arg Asp Leu Ala Glu Val
<210> 24
<211> 13
<212> PRT
<213> Homo sapiens
<400> 24
Val Ile Arg Thr Asp Thr Phe Lys His Leu Arg His Leu
<210> 25
<211> 13
<212> PRT
<213> Homo sapiens
<400> 25
Phe Asn Arg Val Pro Ser Leu Arg Arg Leu Asp Leu Gly
<210> 26
<211> 13
<212> PRT
<213> Homo sapiens
<400> 26
Phe Gln Gly Leu Thr Ser Leu Arg Lys Leu Trp Leu Met
```

74

```
<210> 27
 <211> 13
<212> PRT
 <213> Homo sapiens
 <400> 27
 Leu Met Thr His Gly Ser Tyr Arg Val Arg Ile Ser Val
 <210> 28
 <211> 13
 <212> PRT
 <213> Homo sapiens
 <400> 28
 Leu Gln Pro Arg Gly Thr Glu Lys Glu Pro Pro Gly Pro
 <210> 29
 <211> 13
<212> PRT
 <213> Homo sapiens
 <400> 29
 Ala Pro Ala Pro Arg Ser Ser Arg Pro Thr Glu Lys Ala
                 5
 <210> 30
 <211> 13
<212> PRT
 <213> Homo sapiens
 <400> 30
 Arg Ser Ser Arg Pro Thr Glu Lys Ala Phe Thr Val Pro
                 5
 <210> 31
 <211> 13
 <212> PRT
 <213> Homo sapiens
 <400> 31
 Asp Asp Val Met Lys Thr Thr Lys Ile Ile Gly Cys
                5
 <210> 32
 <211> 32
 <212> PRT
 <213> Homo sapiens
 <400> 32
 Lys Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn Leu Met Ser Leu
                 5
                                    1.0
                                                        1.5
```

Pro His Asp Leu Phe Thr Pro Leu His Arg Leu Glu Arg Val His Leu

20		25	30	
<210> 33 <211> 14 <212> PRT <213> Homo sapi	iens			
<400> 33				
Ala Gly Gly Thr 1	Gly Ser Gly Gly 5	Gly Gly Pro 10	Gly Gly Ser	
<210> 34 <211> 2756 <212> DNA <213> Homo sapi	iens			
<220> <221> CDS <222> (562)(2	2700)			
<400> 34 ccacgegtee gaeta	agttet agategega	a caacaccaac	gggcccgagg agggaggaag	60
			gaaggaaaga aaggaaggca	120
agaaggaagg cgggc	oggogg gogagggog	c ggggccggac	ggcaggcggg cgcgaggcga	180
ggaggcagag cggcc	occece agececaece	g ccgccgctgc	ggaagccccc tccccaccca	240
ggageegggg aggg	gggaga gcgcgagag	g ctccaggccc	ggccgcagcc ccgccccccg	300
cgcctccccg cagc	gggcct tgcacccca	a attootgage	ctcattgggg gggtcctccc	360
cccacgggcc gggca	atgetg eecceegga	a ggaacccctc	tectegetea egatetegae	420
aggaageeet ggaga	aactgg ggaggcaga	g accccggctg	gccggaggca tgtggagggg	480
ggggcetggg egeag	gggaga ggcccagcg	g aagccaagcc	accaggecce ccagegteca	540
cgcggagcat gaaca			ggc tcc ccg tgc ccc Gly Ser Pro Cys Pro 10	591
			ggg gca ttg ctc ttc Gly Ala Leu Leu Phe 25	639
			gga ggt gga gtg gcc Gly Gly Gly Val Ala 40	687
			gcc acc tcc tgc ccc Ala Thr Ser Cys Pro 55	735
			gtg atc tgc aca cgg Val Ile Cys Thr Arg 70	783
aga gac ctg gcc	gag gtc cca gcc	agc atc ccg	gtc aac acg cgg tac	831

Arg 75	Asp	Leu	Ala	Glu	Val 80	Pro	Ala	Ser	Ile	Pro 85	Val	Asn	Thr	Arg	Tyr 90	
	aac Asn															879
	cac His															927
	aag Lys															975
	gag Glu 140															1023
	tac Tyr															1071
gag Glu	agc Ser	atc I1e	ccc Pro	tcc Ser 175	tac Tyr	gcc Ala	ttc Phe	aac Asn	ege Arg 180	gtg Val	ccc Pro	tcg Ser	ctg Leu	cgg Arg 185	cgc Arg	1119
	gac Asp															1167
	gag G1u															1215
	aag Lys 220															1263
	ctg Leu															1311
	ctc Leu															1359
	atc Ile															1407
aac Asn	ctg Leu	tcc Ser 285	cac His	aac Asn	aac Asn	ctg Leu	atg Met 290	tcg Ser	ctg Leu	ccc	cac His	gac Asp 295	ctc Leu	ttc Phe	acg Thr	1455
	ctg Leu 300															1503
	aac Asn															1551

315					320					325					330	
														ggc Gly 345		1599
														tgc Cys		1647
														gag Glu		1695
														tcc Ser		1743
														tac Tyr		1791
														aac Asn 425		1839
														tca Ser		1887
ggc Gly	aac Asn	acc Thr 445	acc Thr	gcc Ala	tcg Ser	gcc Ala	acg Thr 450	ctc Leu	aac Asn	gtc Val	tcg Ser	gcc Ala 455	gtg Val	gac Asp	ccc Pro	1935
														ggc Gly		1983
														acg Thr		2031
acc Thr	gtg Val	gag Glu	acc Thr	ctg Leu 495	gag Glu	acg Thr	cag Gln	ccc Pro	gga Gly 500	gag Glu	gag Glu	gcc Ala	ctg Leu	cag Gln 505	ccg Pro	2079
cgg Arg	ggg Gly	acg Thr	gag Glu 510	aag Lys	gaa Glu	ccg Pro	cca Pro	ggg Gly 515	ccc Pro	acg Thr	aca Thr	gac Asp	ggt Gly 520	gtc Val	tgg Trp	2127
														tct Ser		2175
														ttc Phe		2223
														gac Asp		2271

					aaa Lys											2319
					atg Met											2367
					cac His											2415
					ctg Leu											2463
					agt Ser 640											2511
					gag Glu											2559
					gcg Ala											2607
					ccg Pro											2655
					tcc Ser											2700
tga	ggcg	gcg	gggc	ggg	eg g	gcga	gggg	e gt	ggag	eccc	cca	ccca	ggt (	ccca	gc	2756
-210	2 .	2 6														

- <210> 35
- <211> 713 <212> PRT
- <213> Homo sapiens
- <400> 35

Met Ala Arg Ala Arg Gly Ser Pro Cys Pro Pro Leu Pro Pro Gly Arg

Met Ser Trp Pro His Gly Ala Leu Leu Phe Leu Trp Leu Phe Ser Pro 20

Pro Leu Gly Ala Gly Gly Gly Val Ala Val Thr Ser Ala Ala Gly 35 40

Gly Gly Ser Pro Pro Ala Thr Ser Cys Pro Val Ala Cys Ser Cys Ser 50 55

Asn Gln Ala Ser Arg Val Ile Cys Thr Arg Arg Asp Leu Ala Glu Val 65 70 75 80

Pro Ala Ser Ile Pro Val Asn Thr Arg Tyr Leu Asn Leu Gln Glu Asn 85 90 95

Gly Ile Gln Val Ile Arg Thr Asp Thr Phe Lys His Leu Arg His Leu  $100 \\ 105 \\ 110$ 

Glu Ile Leu Gln Leu Ser Lys Asn Leu Val Arg Lys Ile Glu Val Gly 115 120 125

Ala Phe Asn Gly Leu Pro Ser Leu Asn Thr Leu Glu Leu Phe Asp Asn 130 135

Arg Leu Thr Thr Val Pro Thr Gln Ala Phe Glu Tyr Leu Ser Lys Leu 145  $\phantom{\bigg|}$  150  $\phantom{\bigg|}$  150  $\phantom{\bigg|}$  155  $\phantom{\bigg|}$  160

Arg Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser Tyr \$165\$ \$170\$

Ala Phe Asn Arg Val Pro Ser Leu Arg Arg Leu Asp Leu Gly Glu Leu 180 185 190

Lys Arg Leu Glu Tyr Ile Ser Glu Ala Ala Phe Glu Gly Leu Val Asn  $195 \hspace{1.5cm} 200 \hspace{1.5cm} 205 \hspace{1.5cm}$ 

Leu Arg Tyr Leu Asn Leu Gly Met Cys Asn Leu Lys Asp Ile Pro Asn 210 215 220

Leu Thr Ala Leu Val Arg Leu Glu Glu Leu Glu Leu Ser Gly Asn Arg 225 230 235 240

Leu Asp Leu Ile Arg Pro Gly Ser Phe Gln Gly Leu Thr Ser Leu Arg 245 250 255

Lys Leu Trp Leu Met His Ala Gln Val Ala Thr Ile Glu Arg Asn Ala  $260 \hspace{1.5cm} 265 \hspace{1.5cm} 270 \hspace{1.5cm}$ 

Phe Asp Asp Leu Lys Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn 275 \$280\$

Leu Met Ser Leu Pro His Asp Leu Phe Thr Pro Leu His Arg Leu Glu 290 295 300 Arg Val His Leu Asn His Asn Pro Trp His Cys Asn Cys Asp Val Leu 305 \$310\$ \$315\$

Trp Leu Ser Trp Trp Leu Lys Glu Thr Val Pro Ser Asn Thr Thr Cys 325 330 335

Cys Ala Arg Cys His Ala Pro Ala Gly Leu Lys Gly Arg Tyr Ile Gly 340 345 350

Glu Leu Asp Gln Ser His Phe Thr Cys Tyr Ala Pro Val Ile Val Glu  $355 \hspace{1.5cm} 360 \hspace{1.5cm} 365$ 

Pro Pro Thr Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu Leu Lys 370 380

Cys Arg Thr Gly Thr Ser Met Thr Ser Val Asn Trp Leu Thr Pro Asn 385  $\phantom{\bigg|}$  390  $\phantom{\bigg|}$  400

Gly Thr Leu Met Thr His Gly Ser Tyr Arg Val Arg Ile Ser Val Leu 405 410 415

His Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp Thr Gly
420 425 430

Gln Tyr Thr Cys Met Val Thr Asn Ser Ala Gly Asn Thr Thr Ala Ser 435 440

Gly Ser Gly Gly Gly Gly Pro Gly Gly Ser Gly Gly Val Gly Gly Gly 465 \$470\$

Ser Gly Gly Tyr Thr Tyr Phe Thr Thr Val Thr Val Glu Thr Leu Glu 485 490 495

Thr Gln Pro Gly Glu Glu Ala Leu Gln Pro Arg Gly Thr Glu Lys Glu  $500 \hspace{1cm} 505 \hspace{1cm} 510 \hspace{1cm}$ 

Pro Pro Gly Pro Thr Thr Asp Gly Val Trp Gly Gly Gly Arg Pro Gly 515  $\phantom{00}$  520  $\phantom{00}$  525

Ser Ser Arg Pro Thr Glu Lys Ala Phe Thr Val Pro Ile Thr Asp Val 545  $\phantom{0}550$   $\phantom{0}555$ 

Leu Val Ala Phe Tyr Lys Leu Arg Lys Gln His Gln Leu His Lys His  $595 \hspace{1.5cm} 600 \hspace{1.5cm} 605$ 

His Gly Pro Thr Arg Thr Val Glu Ile Ile Asn Val Glu Asp Glu Leu 610 620

Pro Ala Ala Ser Ala Val Ser Val Ala Ala Ala Ala Ala Val Ala Ser 625  $\phantom{\bigg|}630\phantom{\bigg|}630\phantom{\bigg|}635\phantom{\bigg|}635\phantom{\bigg|}$ 

Gly Gly Val Gly Gly Asp Ser His Leu Ala Leu Pro Ala Leu Glu 645  $\phantom{0}650$   $\phantom{0}655$ 

Arg Asp His Leu Asn His His His Tyr Val Ala Ala Ala Phe Lys Ala 660 665 670

His Tyr Ser Ser Asn Pro Ser Gly Gly Gly Cys Gly Gly Lys Gly Pro 675 680 685

Pro Gly Leu Asn Ser Ile His Glu Pro Leu Leu Phe Lys Ser Gly Ser 690 695 700

Lys Glu Asn Val Gln Glu Thr Gln Ile 705 710

<210> 36

<211> 14

<212> PRT <213> Homo sapiens

<400> 36

Leu Lys Asp Ile Pro Asn Leu Thr Ala Leu Val Arg Leu Glu 1  $\phantom{\bigg|}$ 

<210> 37

<211> 14 <212> PRT

<213> Homo sapiens

<400> 37

```
Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn Leu Met Ser
<210> 38
<211> 14
<212> PRT
<213> Homo sapiens
<400> 38
Glu Thr Val Pro Ser Asn Thr Thr Cys Cys Ala Arg Cys His
<210> 39
<211> 14
<212> PRT
<213> Homo sapiens
<400> 39
Pro Pro Thr Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu
<210> 40
<211> 14
<212> PRT
<213> Homo sapiens
<400> 40
Asn Trp Leu Thr Pro Asn Gly Thr Leu Met Thr His Gly Ser
<210> 41
<211> 14
<212> PRT
<213> Homo sapiens
<400> 41
His Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp
<210> 42
<211> 14
<212> PRT
<213> Homo sapiens
<400> 42
Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp Thr Glv Gln
<210> 43
<211> 14
<212> PRT
<213> Homo sapiens
<400> 43
Thr Asn Ser Ala Gly Asn Thr Thr Ala Ser Ala Thr Leu Asn
```

32

```
1
               5
                                  1.0
<210> 44
<211> 14
<212> PRT
<213> Homo sapiens
<400> 44
Ala Ser Ala Thr Leu Asn Val Ser Ala Val Asp Pro Val Ala
<210> 45
<211> 13
<212> PRT
<213> Homo sapiens
<400> 45
Ser Arg Val Ile Cys Thr Arg Arg Asp Leu Ala Glu Val
<210> 46
<211> 13
<212> PRT
<213> Homo sapiens
<400> 46
Val Ile Arg Thr Asp Thr Phe Lys His Leu Arg His Leu
                5
<210> 47
<211> 13
<212> PRT
<213> Homo sapiens
<400> 47
Phe Asn Arg Val Pro Ser Leu Arg Arg Leu Asp Leu Gly
                5
<210> 48
<211> 13
<212> PRT
<213> Homo sapiens
<400> 48
Phe Gln Gly Leu Thr Ser Leu Arg Lys Leu Trp Leu Met
                5
<210> 49
<211> 13
<212> PRT
<213> Homo sapiens
<400> 49
```

Leu Met Thr His Gly Ser Tyr Arg Val Arg Ile Ser Val

5

```
<210> 50
<211> 13
<212> PRT
<213> Homo sapiens
<400> 50
Leu Gln Pro Arg Gly Thr Glu Lys Glu Pro Pro Gly Pro
<210> 51
<211> 13
<212> PRT
<213> Homo sapiens
<400> 51
Ala Pro Ala Pro Arg Ser Ser Arg Pro Thr Glu Lys Ala
<210> 52
<211> 13
<212> PRT
<213> Homo sapiens
<400> 52
Arg Ser Ser Arg Pro Thr Glu Lys Ala Phe Thr Val Pro
<210> 53
<211> 13
<212> PRT
<213> Homo sapiens
<400> 53
Asp Asp Val Met Lys Thr Thr Lys Ile Ile Gly Cys
<210> 54
<211> 32
<212> PRT
<213> Homo sapiens
<400> 54
Lys Ser Leu Glu Glu Leu Asn Leu Ser His Asn Asn Leu Met Ser Leu
Pro His Asp Leu Phe Thr Pro Leu His Arg Leu Glu Arg Val His Leu
            20
                               25
<210> 55
<211> 14
<212> PRT
<213> Homo sapiens
<400> 55
```

```
Ala Gly Gly Thr Gly Ser Gly Gly Gly Gly Pro Gly Gly Ser
<210> 56
<211> 14
<212> PRT
<213> Homo sapiens
<400> 56
Ala Ala Ala Val Ala Ser Gly Gly Gly Val Gly Gly Asp Ser
<210> 57
<211> 14
<212> PRT
<213> Homo sapiens
<400> 57
Tyr Ser Ser Asn Pro Ser Gly Gly Gly Cys Gly Gly Lys Gly
<210> 58
<211> 649
<212> PRT
<213> Homo sapiens
<400> 58
Met Lys Leu Trp Gln Val Thr Val His His His Thr Trp Asn Ala
Ile Leu Leu Pro Phe Val Tyr Leu Thr Ala Gln Val Trp Ile Leu Cys
Ala Ala Ile Ala Ala Ala Ser Ala Gly Pro Gln Asn Cys Pro Ser
Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val Val Cys Thr Arg Arg
Gly Leu Ser Glu Val Pro Gln Gly Ile Pro Ser Asn Thr Arg Tyr Leu
Asn Leu Met Glu Asn Asn Ile Gln Met Ile Gln Ala Asp Thr Phe Arg
His Leu His His Leu Glu Val Leu Gln Leu Gly Arg Asn Ser Ile Arg
Gln Ile Glu Val Gly Ala Phe Asn Gly Leu Ala Ser Leu Asn Thr Leu
Glu Leu Phe Asp Asn Trp Leu Thr Val Ile Pro Ser Gly Ala Phe Glu
Tyr Leu Ser Lys Leu Arg Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu
145
                    150
                                        155
Ser Ile Pro Ser Tyr Ala Phe Asn Arg Val Pro Ser Leu Met Arg Leu
```

				165					170					1/5	
Asp	Leu	Gly	Glu 180	Leu	Lys	Lys	Leu	Glu 185	Tyr	Ile	Ser	Glu	Gly 190	Ala	Phe
Glu	Gly	Leu 195	Phe	Asn	Leu	Lys	Tyr 200	Leu	Asn	Leu	Gly	Met 205	Cys	Asn	Ile
Lys	Asp 210	Met	Pro	Asn	Leu	Thr 215	Pro	Leu	Val	Gly	Leu 220	Glu	Glu	Leu	Glu
Met 225	Ser	Gly	Asn	His	Phe 230	Pro	Glu	Ile	Arg	Pro 235	Gly	Ser	Phe	His	Gly 240
Leu	Ser	Ser	Leu	Lys 245	Lys	Leu	Trp	Val	Met 250	Asn	Ser	His	Glu	Arg 255	Asn
Ala	Phe	Asp	Gly 260	Leu	Ala	Ser	Leu	Val 265	Glu	Leu	Asn	Leu	Ala 270	His	Asn
Asn	Leu	Ser 275	Ser	Leu	Pro	His	Asp 280	Leu	Phe	Thr	Pro	Leu 285	Arg	Tyr	Leu
Val	Glu 290	Leu	His	Leu	His	His 295	Asn	Pro	Trp	Asn	Cys 300	Asp	Cys	Asp	Ile
Leu 305	Trp	Leu	Ala	Trp	Trp 310	Leu	Arg	Glu	Tyr	Ile 315	Pro	Thr	Asn	Ser	Thr 320
Cys	Cys	Gly	Arg	Cys 325	His	Ala	Pro	Met	His 330	Met	Arg	Gly	Arg	Tyr 335	Leu
Val	Glu	Val	Asp 340	Gln	Ala	Ser	Phe	Gln 345	Cys	Ser	Ala	Pro	Phe 350	Ile	Met
Asp	Ala	Pro 355	Arg	Asp	Leu	Asn	I1e 360	Ser	Glu	Gly	Arg	Met 365	Ala	Glu	Leu
Lys	Cys 370	Arg	Thr	Pro	Pro	Met 375	Ser	Ser	Val	Lys	Trp 380	Leu	Leu	Pro	Asn
Gly 385	Thr	Val	Leu	Ser	His 390	Ala	Ser	Arg	His	Pro 395	Arg	Ile	Ser	Val	Leu 400
Asn	Asp	Gly	Thr	Leu 405	Asn	Phe	Ser	His	Val 410	Leu	Leu	Ser	Asp	Thr 415	Gly
Val	Tyr	Thr	Cys 420	Met	Val	Thr	Asn	Val 425	Ala	Gly	Asn	Ser	Asn 430	Ala	Ser
Ala	Tyr	Leu 435	Asn	Val	Ser	Thr	Ala 440	Glu	Leu	Asn	Thr	Ser 445	Asn	Tyr	Ser
Phe	Phe 450	Thr	Thr	Val	Thr	Val 455	Glu	Thr	Thr	Glu	11e 460	Ser	Pro	Glu	Asp
Thr 465	Thr	Arg	Lys	Tyr	Lys 470	Pro	Val	Pro	Thr	Thr 475	Ser	Thr	Gly	Tyr	Gln 480
Pro	Ala	Tyr	Thr	Thr 485	Ser	Thr	Thr	Val	Leu 490	Ile	Gln	Thr	Thr	Arg 495	Val

Pro Ly	s Gln	Val 500	Ala	Val	Pro	Ala	Thr 505	Asp	Thr	Thr	Asp	Lys 510	Met	Gln	
Thr Se	r Leu 515	Asp	Glu	Val	Met	Lys 520	Thr	Thr	Lys	Ile	Ile 525	Ile	Gly	Cys	
Phe Val		Val	Thr	Leu	Leu 535	Ala	Ala	Ala	Met	Leu 540	Ile	Val	Phe	Tyr	
Lys Let 545	ı Arg	Lys	Arg	His 550	Gln	Gln	Arg	Ser	Thr 555	Val	Thr	Ala	Ala	Arg 560	
Thr Va	l Glu	Ile	Ile 565	Gln	Val	Asp	Glu	Asp 570	Ile	Pro	Ala	Ala	Thr 575	Ser	
Ala Al	a Ala	Thr 580	Ala	Ala	Pro	Ser	Gly 585	Val	Ser	Gly	Glu	Gly 590	Ala	Val	
Val Le	Pro 595		Ile	His	Asp	His 600	Ile	Asn	Tyr	Asn	Thr 605	Tyr	Lys	Pro	
Ala Hi		Ala	His	Trp	Thr 615	Glu	Asn	Ser	Leu	Gly 620	Asn	Ser	Leu	His	
Pro Th	r Val	Thr	Thr	Ile 630	Ser	Glu	Pro	Tyr	Ile 635	Ile	Gln	Thr	His	Thr 640	
Lys As	) Lys	Val	Gln 645	Glu	Thr	Gln	Ile								
<210> <211> <212> <213>	59 255 DNA Homo	sap	iens												
<400> gtggtg	59 tggg	cggg	gaca	gc c	acct	ggcc	c tg	cccg	ccct	gga	gcga	gac	cacc	tcaacc	60
accacc	acta	cgtg	gctg	cc g	cctt	caag	g cg	cact.	acag	cag	caac	ccc	agcg	gcgggg	120
gctgcg	gggg	caaa	ggcc	cg c	ctgg	ect c	a ac	tcca	tcca	cga	acct.	ctg	ctct	tcaaga	180
gegget	ccaa	ggag	aacg	tg c	aaga	gacg	c ag	atct	gagg	cgg	cggg	gcc	gggc	gggcga	240
ggggcg	tgga	gccc	С												255
<210> <211> <212> <213>	60 38 DNA Homo	sap	iens												
<400> gcagca	60 gegg	ccgc	ggtg	ga g	gtgg	agtg	g cc	gtga	cg						38
<210> <211> <212> <213>	61 37 DNA Homo	sap	iens												

<400> 61 37 gcagcagtcg acgatctgcg tctcttgcac gttctcc <210> 62 <210> 62 <211> 38 <212> DNA <213> Homo sapiens <400> 62 38 gcagcagcgg ccgcatggcg cgtgcccgcg gctccccg <210> 63 <211> 37 <212> DNA <213> Homo sapiens <400> 63 37 gcagcagtcg acggaggtca tggaggtgcc cgtgcgg